JDISS SERVER & JDISS CLIENT SEGMENTS FOR GCCS 2.1/2.2

INSTALLATION MANUAL

for the

Joint Deployable Intelligence Support System
JDISS Server Segment Ver 2.0.3
JDISS Client Segment Ver 2.0.4

July 29, 1996

Prepared by:

Office of Naval Intelligence - JDISS PMO
ONI-7JD
Suitland, Maryland

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Technical Review / Date Quality Review / Date

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Management Review / Date

JOINT DEPLOYABLE INTELLIGENCE SUPPORT SYSTEM (JDISS)

JDISS SERVER & JDISS CLIENT SEGMENTS FOR GCCS 2.1/2.2

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Table Of Contents

1. JDISS SOFTWARE APPLICATIONS OVERVIEW

The JDISS V2.0 software suite consists of both commercial and government software and utilities integrated under the DoDIIS Common Desktop. At present, JDISS provides a core set of segments that bring a basic level of intelligence functionality to GCCS plus interoperability with standalone / deployed JDISS 2.0 workstations. In this release, the JDISS capability for GCCS comes in four segments: JDISS Server, JDISS Client, and two optional segments - IPA Client and JDISS Video. This document covers installation of the JDISS Server and Client Segments.

2. JDISS SYSTEM REQUIREMENTS & DEPENDENCIES

2.1 File System and NFS Requirements

The JDISS Server Segment is installed on a GCCS Applications Server in a local area network environment. The JDISS Server segment itself requires approximately 400MB of disk space, however additional space is recommended to support future growth in available JDISS corporate services and/or optional products. The JDISS Client segment requires about 30MB of storage space on each client workstation that will need JDISS functionality. The GCCS JDISS Clients must be able to communicate with the JDISS Server segment at near Ethernet speeds (i.e. 10Mbps) to properly support Network File System (NFS) client mounts of JDISS software on the server. Normally the Applications server also doubles as the JDISS license server (alias lmserver), however if required, JDISS licenses can be supplied by a remote server located anywhere in the LAN or WAN environment. (The Systems Administration chapter of this document provides details about license management and reconfiguring for remote distribution of JDISS licenses.)

2.2 Segment Dependencies

MOTIF 1.2.4 is the underlying windows manager in the GCCS COE. It is necessary to support the JDISS segments as well as most other segments in GCCS.

ApplixWare Version 3.2 or 4.X (Applix, Inc.) is a COTS software suite which provides an integrated set of E-mail, Document, Spreadsheet, and Graphics applications. Applix Word is a full-featured word processing program that can import graphics and spreadsheet files from the other Applix components. Documents created in this way can be attached to Applix E-mail notes for dissemination. The JDISS Server and Client Segments are dependent on the presence of the GCCS Applix segment for many functions.

Netscape Version 1.1 or 2.X (Netscape Inc.) is a COTS Web Browser which is used to query the many Web sites (servers) on various networks. It allows a user to browse html-formatted documents and perform a variety of functions which are still evolving

in Web technology. The JDISS Intelink and JUIC functions are dependent on the presence of the GCCS Netscape segment.

3. JDISS SERVER SEGMENT INSTALLATION

3.0 Preinstallation Warning

Do not install the JDISS Server and JDISS Client segments on the same workstation.

3.1 JDISS Segments Installation

This section addresses installation, post-installation, and routine system administration of the GCCS JDISS Server (JDISS) and Client (JDISSC) Segments. The JDISS Server Segment is normally installed on the GCCS Applications Server in a local area network environment. It stores the bulk of the JDISS COTS and GOTS applications that are used for JDISS. The JDISS Client Segment is installed on any GCCS workstation requiring Intelligence functionalities. It was designed for use in a Local Area Network environment where it can communicate with its corresponding server at or near Ethernet speed (10Mbps), preferably on the same subnet. The server can be located on a different subnet, and across multiple routers, but Ethernet speed access must be possible. JDISSC was designed therefore to conserve disk space on client workstations by NFS-mounting most JDISS applications from the server. NFS (Network File System) mounts are usually not good for mounting and executing large applications across Wide Area Networks and/or at non-Ethernet speeds.

3.1.1 Installation via SAInstaller

Both the JDISS Server Segment (JDISS) and JDISS Client Segment (JDISSC) are installed using the GCCS SAInstaller program. The JDISS SegDescrip files will define the JDISS environment, modify community files required and create the JDISS Icon on the GCCS desktop. SAInstaller invokes "PostInstall" (/h/JDISS/SegDescrip/PostInstall) which performs most Post Installation tasks automatically. Upon completion, the System Administrator should check the install log file and then reboot the system. Upon reboot, the System Administrator must log in as SECMAN and activate the JDISS option. After running SAInstaller, some steps still must be performed manually by the System Administrator as described in the following section.

3.2 JDISS Segments Post-Installation and Routine Maintenance

3.2.1 License Installation and Administration

3.2.1.1 Required License Files for JDISS

There are two license files required for the JDISS Segments to operate, the JDISS license itself and the SASS (Systems Acquisition Support Services) COTS products license. Both are installed in the JDISS Server Segment. The SASS license is distributed on the JDISS Server Segment load tape and normally requires no changes or updates after running SAInstaller. (Its presence is required to be compliant with the terms of the SASS contract under which the JDISS COTS licenses are purchased.) The JDISS license on the other hand is distributed separately and is created for a specific server and quantity of licenses. JDISS licenses are typically distributed from the GCCS Home Page server maintained by DISA on the SIPRNET. The JDISS license must be installed manually by the System Administrator as follows:

3.2.1.2 JDISS License Installation and Alteration

JDISS License files are distributed to GCCS sites through placement on the SIPRNET GCCS Home Page server at the DISA Operational Support Facility (OSF). Contact the GCCS Hotline or CM Office for information on obtaining a JDISS license. A license file should only be installed on the host (or server) that is named in the first line of the file. Some sites may receive multiple license files for different hosts. It is important to understand that a JDISS license file can only be installed on the host (or server) it is intended for. Client workstations will automatically check out licenses from a designated server and check them back in when done. This allows application licenses to float among client workstations based on actual need and usage. The hostid (for Sun Workstations), software quantities, and expiration dates are all encrypted in the JDISS license.dat file and cannot be altered in the field.

File Name: The license files are distributed as small ASCII text format files which are named according to their designated server (i.e. a hostname). Once copied to the appropriate server, the name of the license file must be changed to **license.dat**.

3.2.1.3 JDISS License Installation

Copy the license file you received to a working directory on the server and rename it from "hostname" to license.dat. Cat or view the license with vi to verify the hostname and hostid are correct for the server you are installing it on.

Copy the license.dat file to /h/JDISS/etc as follows: cp license.dat /h/JDISS/etc

Reboot the machine upon completion of remaining post-installation tasks, or perform the procedure described in paragraph 3.2.1.5 to restart the license services.

3.2.1.4 JDISS License Alteration

If the lmserver machine must be changed to different hardware, a new license file must be obtained from the JDISS PMO via DISA GCCS CM. If the lmserver machine just

needs to be renamed, a System Administrator can perform a name change in the license.dat file without obtaining a new license as follows:

cd /h/JDISS/etc

vi license.dat - On the first line of this file, change "oldhostname" to the new name of this host. Save the file and exit vi.

Reboot the machine or perform the procedure described in paragraph 3.2.1.5 to restart the license services.

3.2.1.5 Restarting License Services

Normally to restart the JDISS license processes, a reboot of the server is performed. However, in cases where the server cannot be taken down for a reboot, the following manual procedure can be used to halt and then restart JDISS and SASS license services.

Warning: Ensure no users are running any JDISS applications, otherwise they may lose JDISS functionality when existing license processes are terminated. The following procedures require root access and should only be carried out by a qualfied GCCS System Administrator.

Open a C shell xterm window
su to root

Begin by terminating any existing license processes (or daemons) for JDISS and SASS as described below. There are normally four of them. You may find that some or all of the processes may not be running; if so proceed until all four are verified to be shut down.

Identify process id numbers (pid's) for the lmgrd processes supporting jdiss and sass.

```
ps -efa | grep lmgrd
```

Look for the pid's for the lmgrd processes that have jdiss and sass for their license files. Be careful as there may be other lmgrd processes supporting other segments. The ones for jdiss and sass have jdiss and sass license files identfied in their command lines (e.g. /h/JDISS/etc/license.dat and /h/JDISS/sass/license/license.dat).

Kill the processes identified above:

```
kill -9 pid (pid for the lmgrd daemon for jdiss)
kill -9 pid (pid for the lmgrd daemon for sass)
```

Identify pid for the sasslmd daemon:

```
ps -efa | grep sasslmd
```

Take the pid number for the sasslmd daemon and kill it.

kill -9 pid (pid for the sasslmd daemon)

Identify pid for the jdiss daemon:
ps -efa | grep jdiss

Take the pid number for the jdiss daemon and kill it.
kill -9 pid (pid for the jdiss daemon)

Once any existing JDISS and SASS daemons are shut down, you may proceed to restart new instances of them as follows:

setenv JDISS_HOME /h/JDISS
setenv SASS /h/JDISS/sass

Start the JDISS license manager:
$JDISS_HOME/progs/Solaris/lmgrd -c $JDISS_HOME/etc/license.dat -l /tmp/lmgrd.log &

Start the SASS license manager:
$SASS/bin/Solaris/lmgrd -c $SASS/license/license.dat -l $SASS/log/license.log &

Note: You do not need to manually restart the sasslmd and jdiss daemons. These are automatically spawned when the lmgrd daemons above are started.

3.2.1.6 Alias "lmserver" Configuration

There must be an alias in the server's /etc/hosts file called "lmserver" which points to the host that will be the JDISS license manager server (i.e., host where the JDISS license file is installed). Normally the "lmserver" alias is set during the GCCS kernel installation. This alias must be propagated throughout the Network Information Service (NIS) environment for client workstations to be aware of who the lmserver is. If NIS is not implemented, then each client must have the alias in their local /etc/hosts file as well as the server. If in doubt, ping lmserver to see if the alias is properly set.

3.2.1.7 Configuring for Use of an Alternate License Server

Some sites have a requirement to use a license that resides on a server on a different subnet or at some distant point. The fact that the JDISS Client Segment NFS-mounts applications from a local server running the JDISS Server Segment should not be construed to mean that JDISS license support must always come from that same server. JDISS licenses can be checked out from a different JDISS Server on a different subnet or across a Wide Area Network (and at 9.6Kbps speeds). For example, a headquarters site may wish to allow a remote site to "feed" off its supply of software licenses. To do this, a JDISS Server Segment must be installed at both the headquarters and the remote site, however the remote site server has no licenses; it points to the headquarters server anytime it needs to check out a license. In effect, this allows the clients at the remote

site to rapidly mount and execute JDISS applications from their own server while checking out licenses from the server at headquarters. During operations, users may note a slight delay on applications launch while waiting for a license request to be serviced and communicated from the headquarters server to the remote site.

Configuration steps for use of an alternate JDISS license server:

1. ____ Verify that the source server ("headquarters") is up and the JDISS Server segment is installed there and tests operational. The system administrator at the source site should be aware of the remote site's desire to use some of their JDISS licenses. Communications tests should be done to ensure the servers at both sites can ping each other(by hostname) without lengthy transmission delays.

Note: In some cases, lengthy transmission delay has been observed to exceed the timeout limits of the current license manager. This problem will be addressed in the next release.

2. ____ Remote site reconfigures its NIS+ environment (and/or Apps Server /etc/host file) to alias "lmserver" (see Sec. 3.2.1.5) to the "headquarters" server instead of its own JDISS Server. Reboot and test JDISS segment operations. If successful, proceed with modifying JDISS Clients as described in step 3 below. If unsuccessful, restore the lmserver alias to its original host; a local JDISS license file will be required.

3. ____ Remote site reconfigures each JDISS Client as follows. Edit the /etc/auto_jdiss file to change all instances of "lmserver" to the actual hostname of the local Apps Server running the JDISS Server segment. This will ensure the clients perform NFS mounts on the local JDISS Server segment vice the distant one at the "headquarters" site.

3.2.1.8 SASS License Alteration

The SASS license is distributed on the JDISS Server Segment load tape and normally requires no changes or updates after running SAInstaller. Unlike the JDISS license, the SASS license can be moved from one server to another without obtaining a new license. However, the license file must be updated by the System Administrator if such a move takes place.

cd /h/JDISS/sass/license
vi license.dat - On the first line of this file, change "oldhostname" to the new name of this host. Save the file and exit vi. Reboot the machine or perform the procedure described in paragraph 3.2.1.5 to restart the license services.

3.2.1.9 License Logs

The responses to all JDISS license requests are logged in the /tmp/lmgrd.log file and can be used to monitor application usage. This file gets overwritten with each reboot. An additional log keeps track of SASS product usage; /h/JDISS/sass/log/license.log. The SASS daemon also records SASS product usage in encrypted logs stored in the /h/JDISS/sass/log directory. The encrypted files are named according to the server's name with a numerical month extension. Periodically it may be necessary to forward copies of these logs to the SASS contract office at the Defense Intelligence Agency. Also, since the SASS logs do not get overwritten with each reboot, the System Administrator should periodically archive them to tape for disk space management.

3.2.1.10 License Error Handling

Boot time errors of the license manager are written to the file /tmp/LM_boot.log. Common errors include:

1) A missing license file - license file not present in:
/h/JDISS/etc/license.dat (JDISS License)
/h/JDISS/sass/license/license.dat. (SASS License)

If the JDISS license is missing, one must be obtained via the GCCS CM office and installed per paragraph 3.2.1.3. The SASS license is included in the JDISS Segment load tape and gets installed as part of the JDISS Server segment. Following installation or change of these files, you must reboot the license server or restart the license processes as described in paragraph 3.2.1.5.

2) Incorrect JDISS license file. (Most likely cause of licensing problems.)

```
cd /h/JDISS/etc
vi license.dat
```

Verify hostid, hostname, and feature expiration dates. You can adjust the hostname if necessary, however a new license file must be obtained to update the hostid and/or expiration dates. If only one or two features are failing to checkout, it is possible that the corresponding encrypted string(s) may be incorrect; this is common for administrators who type this file in by hand. That possibility can only be verified through visual comparison or replacement with a license file known to be valid. If the JDISS license file is changed or replaced, you must reboot the license server or restart the license processes as described in paragraph 3.2.1.5.

3) Incorrect SASS license file. (Normally requires no attention)

```
cd /h/JDISS/sass/license
vi license.dat
```

Verify proper hostname is in the SASS license.dat file. If incorrect or the file is not present, e.g. only a license.dat.proto is present, perform the following:
cp license.dat.proto license.dat

vi license.dat - On the first line of this file, change "XXXHOSTXXX" to the name of this host. Save the file, exit vi, and reboot the license server or restart the license processes as described in paragraph 3.2.1.5.

4) "lmserver" alias not set in /etc/hosts (or NIS yphost map). "lmserver" aliased to nonexistant machine, or to wrong machine.

5) Socket or TCP port errors - another application is using the license manager or sass TCP port or the attempt was made to start the license manager after it was already running. Port assignments can be altered in the license.dat files if necessary without obtaining a new license. Remember that following any change in these files, you must reboot the license server or restart the license processes as described in paragraph 3.2.1.5.

6) Desired product not licensed, or license expired. (Check license.dat files)

3.2.2 Configuring Access to Intelligence Servers

3.2.2.1 Configuring Intelink and JUIC

The Intelink and JUIC (Joint Universal Imagery Client) functions are currently implmented through calls to the GCCS Netscape Segment). A manual Post Install procedure may be done to set the URL's (Uniform Resource Locator addresses) for Intelink and JUIC to other than the default SIPRNET servers. To change these URL's, a System Administor must perform the following:

cd /h/JDISS/data/IXI/Icons/Intelink.obj
vi activate - On the line that begins with WWW_HOME, change the URL http referencefrom "//seawolf.nmic.navy.smil.mil/jdiss/jdiss.html" to "//any_desired_site.smil.mil"
Save the file and exit vi.

cd ../JUIC.obj
vi activate - On the line that begins with WWW_HOME, change the URL http referencefrom "//ipa.acom.smil.mil" to "//any_desired_ipa_server.smil.mil"
Save the file and exit vi.

3.2.2.2 Configuring Remote Services

The Remote Services icon will bring up a Terminal Emulation tool which will allow you to connect to hosts that were configured for terminal emulation in the JDISS Manager. Section 3.2.4 describes how to use JDISS Manager; you will need to select which type of terminal emulation you wish to associate with a given host.

3.2.3 JDISS Alerts Configuration

Note: This procedure should only be necessary for older releases of the JDISS Server and Client segments or for Beta copies of the current release. For the JDISS Alert function to interoperate with its counterpart in the standard JDISS 2.0 workstation and other non-GCCS platforms, the inter process communications port number must be properly set. This can be verified as follows:

Edit the /etc/services file using vi or another text editor

Find the portion of the file for "JDISS daemons"

Check the jdissAlerts line, it should read as follows:
jdissAlerts 15232/tcp

Older releases had 5233 as the port number; change to read 15232 as shown above.

Save the file and exit the editor

3.2.4 Configuration of jdhosts using JDISS Manager

The JDISS Manager function, available from the JDISS Utilities desktop, is an interface to maintain the **jdhosts** file (/h/JDISS/etc/jdhosts). A jdhosts file is present on every GCCS machine that has either JDISS Server (JDISS) or JDISS Client (JDISSC) installed. This file contains hostnames, IP addresses, aliases, desired functions, and terminal emulation types, identifying remote systems for JDISS interoperability. Proper maintenance of the the jdhost file using JDISS Manager is required for your workstation to interoperate with JDISS applications installed on other GCCS, JMCIS, or JDISS workstations. The JDISS Manager user interface is shown below in figure 3.2.3-1.

Upon first use of the JDISS Manager program, the jdhosts file is automatically primed with the hosts contained in the local /etc/hosts file, however no functions or terminal emulation types will be activated; i.e. the default is no associated JDISS functions. Therefore one must use the JDISS Manager to associate desired JDISS functions with desired hosts. Additional hosts may also be added to the jdhosts file using this program.

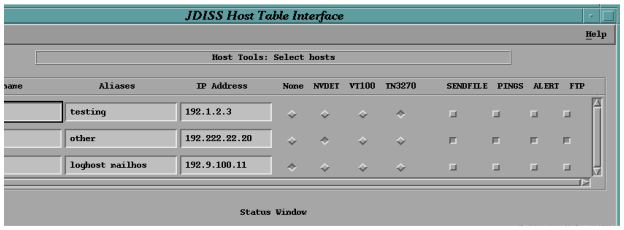

Figure 3.2.4-1. ***JDISS Host Table Interface Window***

It is important to understand that *in GCCS*, host additions, deletions, or changes performed via JDISS Manager only affect the jdhosts file. JDISS Manager does not touch the system /etc/host file nor does it alter the NIS / NIS+ environment in any way. This differs from the standalone JDISS workstation implementation of JDISS Manager.

3.2.4.1 jdhosts Field Definitions

The format of this file is as follows:

(1) Hostname
(2) Aliases ... can be more than one
(3) IP address
(4) Terminal Emulation type: A choice from None, NVDET, VT100, or TN3270.
(5) Sendfile
(6) Pings
(7) Alerts
(8) Ftp

Each field of the file is separated by a tab character. The JDISS Manager is provided to update and modify host tables for JDISS, CSE, and Unix.

Description

Hostname - The name that the operating system has assigned to the machine. Value returned from the command 'hostname`.

Aliases - Alternate names for the defined host. Each name should be separated by spaces with no more than 30 total characters in the field including spaces.

IP address - The number of the form XXX.XXX.XXX.XXX as assigned by the network administrator that uniquely identifies this host on the network. Maximum numeric value is 255.

Terminal Emulation - Emulates alternate system protocols; tn3270 emulates IBM, nvdet emulates GOTS package, vt100 emulates smaller screen.

Sendfile - Toggle switch "on" to enable sendfile capability to a particular host.

Pings - Toggle switch "on" to enable ping capability to a particular host.

Alerts - Toggle switch "on" to enable alert capability to a particular host.

Ftp - Toggle switch "on" to enable ftp capability to a particular host.

Pull down menus

The pull down menus from the JDISS Manager provide important functions to the JDISS administrator.

The File pulldown contains the following options:
Insert Host
Remove Host
Update Host Tables - JDISS Host Table
Quit

Note: In GCCS it is normal to get an NIS update error message upon completing the Update Host Tables procedure. This is due to JDISS Manager being restricted in GCCS to only updating the jdhosts file. Since it can't modify the NIS maps, the program sends an error message.

The Sort pulldown contains the following options:
Hostname
IP Address

3.2.5 Configuration of the Synchronize Application

Synchronize maintains a users file that contains a list of all the users that can access the software. When Synchronize is initiated, the users file is scanned for the current user. If that user does not exist, it is added to the file. The problem is that this update to the users file does not take effect immediately. The user will get this message in a window: "Your login name is not in the Synchronize users file. Please ask the Synchronize administrator to add you to the users file." The user has in fact been added but Synchronize does not recognize it yet. This is a bug in Synchronize and the workaround is as follows:

The system administrator needs to do a "ps" and search for the process called "synchrod" and kill it. The process will automatically re-start and read the updated users file. The user will now be able to initiate Synchronize. This should be done as follows:

ps -ef | grep synchrod
kill -9 <synchrod process id>

Another workaround is to add all of the users to the Synchronize users file at one time and kill the "synchrod" process or re-boot the system. This would need to be done as follows:

cd /h/JDISS/synchronize/db
vi users - Go to the bottom of the file. For each user add "username, username" one user to a line. Example:
dave, dave
steve, steve
Save the file and exit vi. Re-boot the system or kill the "synchrod" process as described above.

3.2.6 JDISS Applix Office Automation Functions

A number of office automation functions in the JDISS Segments for GCCS are engineered to use the GCCS Applix Segment. The following functions in JDISS are dependent on the presence of the GCCS Applix Segment:

JDISS share E-Mail

Without Applix, the share E-Mail account will still be in effect, however there will not be an automatic pop-up window notifying the user that share E-Mail has arrived. Mail for share would have to be manually checked by other means if the Applix segment is not loaded on the system.

JDISS Print Target

Without Applix, the JDISS Print target will still work for generic text, postscript, and other file types that do not require filtering through an Applix application.

JDISS On-Line Documents

These files are in Applix format and require Applix Word in order to be viewed. They are stored in the /h/JDISS/data/Users_Guide directory.

3.2.7 Miscellaneous System Administration Functions

Backup & Restore provides tape backup control for both system and user files.

Screen Lock locks screen applications from outside access while the user steps away from the terminal.

Shutdown is not enabled for GCCS.

Trash removes files from the system.